

Using GPS

Training for use of Stream
Team GPS units

Where's Waldo?

Getting Coordinates



GPS Information

- If you have a GPS unit **PLEASE** complete a GPS Site Location Data Sheet and send it in with your data
- **This does NOT replace an accurate verbal description**



Description Only

vs. GPS Data

- Zoom to county
- Identify place name (park, spring, etc.)
- Locate stream
- Locate road
- Determine flow direction (upstream or downstream)
- Measure distance


- Enter GPS coordinates
- Zoom to coordinates
- Confirm with location description

Improving Accuracy

- Use WAAS
- Average multiple readings
- Avoid reflections
- Find best exposure
- Stabilizing Time (wait 15+ minutes optimum accuracy)

GPS Data Sheet

- Header
- GPS make and model
- WAAS enabled
- Datum = NAD 1983
ONLY
- Horizontal accuracy
(meters) ≤ 7 M (20 ft.)
 - Stabilizing time
 - Longer the better
- UTM

GPS DATA SHEET	
Please check the box next to the "Site #" if this is a new site and please be sure to attach a map. (PLEASE PRINT)	
<input type="checkbox"/> Site # _____	Stream _____ County _____
Site Location _____	
Date _____	Time (military time) _____ Rainfall (inches in last 7 days) _____ Water Temp. (°C) _____
Trained Data Submitter (responsible volunteer) _____ Stream Team Number _____	
Trained Participants _____	
GPS RECEIVER INFORMATION	
1. GPS Make and Model: _____	
2. Wide Angle Augmentation System (WAAS) Enabled: <input checked="" type="checkbox"/> Yes	
DATUM	
3. Horizontal Datum: <input checked="" type="checkbox"/> North American Datum (NAD) 1983	
POSITION ERROR INFORMATION (less than 7 meters preferred)	
*4. Estimated Position Error (EPE): _____	<input type="checkbox"/> Meters (preferred) <input type="checkbox"/> Feet
*5. Horizontal Accuracy: _____	<input type="checkbox"/> Meters (preferred) <input type="checkbox"/> Feet
*6. Point Dilution of Precision (PDOP): _____	
(*see Position Error Information section on back for instructions)	
COORDINATES - UNIVERSAL TRANSVERSE MERCATOR (UTM) OPTION (preferred option)	
7. Easting: _____	
8. Northing: _____	
9. UTM Zone: <input type="checkbox"/> Zone 15	
COORDINATES - LATITUDE AND LONGITUDE OPTION	
10. Latitude: _____ N	
11. Longitude: _____ W	
12. Format: <input type="checkbox"/> Decimal Degrees (ddd.dddd°)	
COMMENTS: _____	
_____ _____	
PLEASE KEEP A COPY AND SEND ORIGINAL DATA TO: Stream Team Coordinator Water Protection Program Department of Natural Resources P.O. Box 176 Jefferson City, MO 65102-0176	
Volunteer Monitoring - 11/11	
	

GPS Data Submission

Instructions on the back of form

GPS DATA SHEET INSTRUCTIONS

Please read the following descriptions before filling out this sheet. Please note that Universal Transverse Mercator (UTM) coordinate are the preferred coordinates, but Latitude/Longitude in Decimal Degrees (ddd.dddd°) may also be used. Due to the technical complexity of Global Positioning Systems and Geographic Information Systems, proper completion of these fields is necessary to establish an exact location. If these fields are not completed, the program cannot use your GPS data. This sheet does not replace the map of your site. If you have not already done so, you will still need to send a map.

GPS RECEIVER INFORMATION

1. **GPS Make and Model.** Please provide the brand name of your GPS receiver (e.g., Garmin, Lowrance, Magellan, etc.) and the model if known (e.g., eTrex Vista, GlobalMap 100, Meridian Platinum, etc.)

2. **Wide Angle Augmentation System (WAAS) Enabled.** WAAS is an additional set of satellites, only one of which is "visible" from most areas in Missouri. If your GPS receiver is WAAS capable and this function is being used, check "yes".

DATUM

3. **Horizontal Datum.** Next to the coordinates themselves, this is the most important piece of information to collect. Your GPS receiver displays where you are based on this reference. Without the horizontal datum, it is impossible to accurately place the coordinates on a map. This information can usually be found quite easily in the menu system of your GPS receiver. You may need to consult the user manual that came with your GPS receiver.

POSITION ERROR INFORMATION

* The make and model of GPS unit you are using will determine which position error information you will need to provide. Most units will only offer one of the following three options. Please provide the appropriate position error information from your unit, you may need to consult the user manual that came with your unit.

*4. **Estimated Position Error.** If available on your receiver, please record and check the appropriate distance measurement.

*5. **Horizontal Accuracy.** If available on your receiver, please record and check the appropriate distance measurement.

*6. **Point Dilution of Precision.** If available please record.

COORDINATES

NOTE: You have the **OPTION** of using two coordinate systems, Universal Transverse Mercator **OR** Latitude/Longitude.

If using the Universal Transverse Mercator (UTM) option

7 & 8. **Easting and Northing.** Enter the coordinates in these fields **only** if using UTM option. While at your monitoring site, enter the UTM coordinates exactly as they are displayed on your GPS receiver.

9. **UTM Zone.** Check the box for the UTM Zone number that is displayed on your GPS receiver.

If using the latitude/longitude option

10 & 11. **Latitude and Longitude.** Enter the coordinated in these fields **only** if using Latitude/Longitude option. While at your monitoring site, enter the latitude and longitude coordinates displayed on your GPS receiver, copying the exact coordinates in the displayed format (see item 12 below).

12. **Format.** This information can usually be found quite easily in the menu system of your GPS receiver. You may need to consult the user manual that came with your GPS receiver.

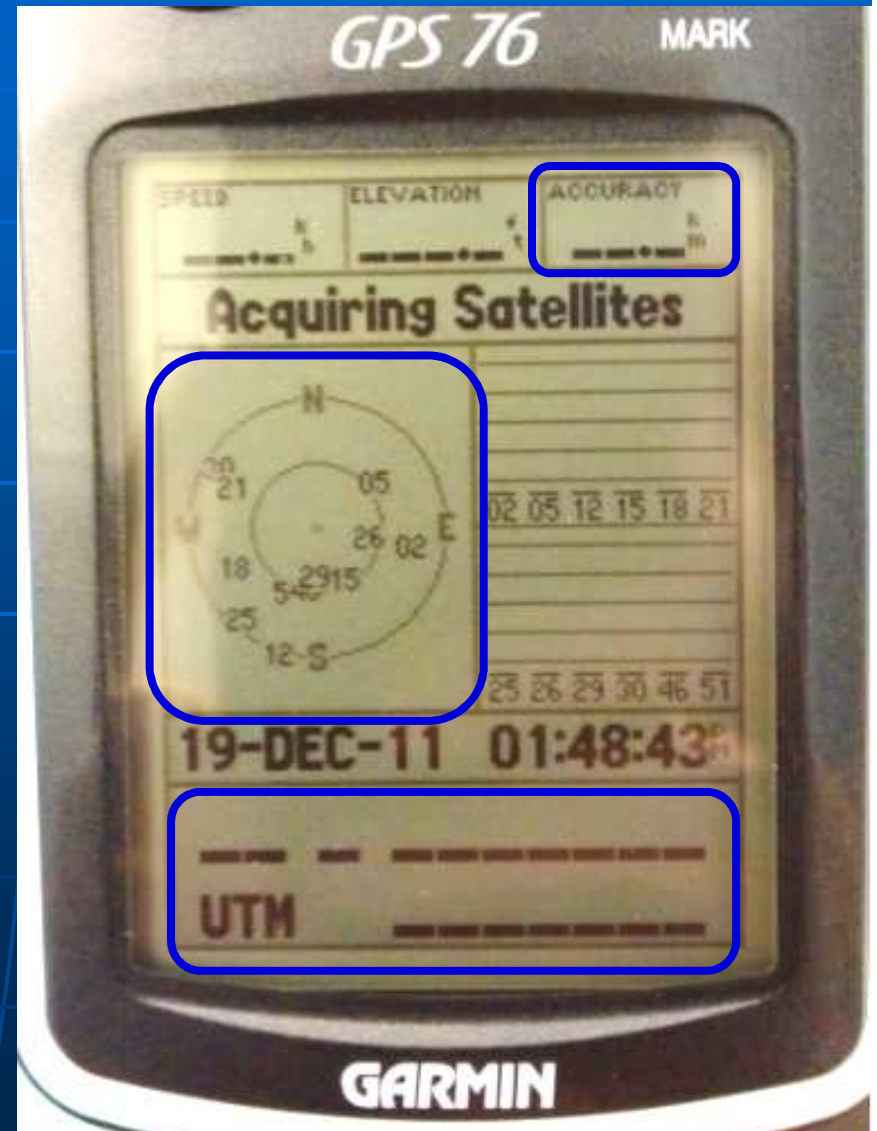
COMMENTS

Comments. Please include any conditions that may hinder the ability of your GPS receiver to receive data (e.g., dense clouds, heavy tree coverage, structures, etc.). If there is additional information from your GPS receiver that may be helpful to us please include them in this field. Please include any other information that we may find helpful.

Where's Waldo?

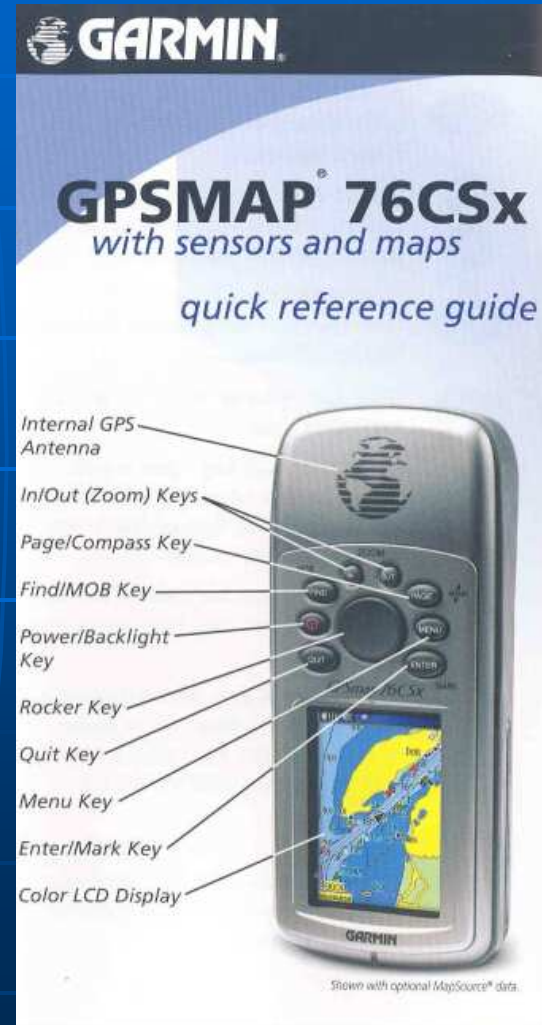
Getting Coordinates

- Satellites
 - Stabilizing time
- Accuracy
 - Meters
- Location reading
 - UTM's
 - Easting and Northing



Garmin GPSMAP 76CSx

- Fast satellite capture
- Large storage capacity
- Waterproof
- Floats
- Large screen and buttons
- WAAS Capable



Loan Procedures

- 10-day loan period
 - Unit & case
 - References
 - Users Manual
 - Quick Reference Guide
 - Cheat Sheet
 - GPS Data Sheet
- Return w/ enclosed prepaid return mailing label



Request a GPS Unit

- Request by phone/email
 - Amy.Meier@mdc.mo.gov
 - 573/522-4115 x 3166
 - ST email: streamteam@mdc.mo.gov
 - ST 800#: 800/781-1989
- Let us know how many sites

Questions??

There's Waldo!!

